Arlary, 19. Jany 1846

My dear Sir

I have just received yours of the 29 dec.r - and beg to thank you for your offer of the 2d Vol. of your Elements of Botany - of which D.r Boott spoke highly when I saw him in London but which I have not yet seen - I have written to Wiley & Putnam Law to forward it

I do not approve at all of beginning at this season of the year, yet I must commence on the 2d of next month. I have been hard at work and have writ 20 lectures written - and of these writ ten pages on Veg. anat. and Physiology: indeed that is a subject I greatly a great distaste for: this arose from various causes: in the first place I do

end of the pollen tube becomes agglutinated to the apex of the embryo-sac - but after that the first cell of the embryo is developed that is how and the interior of the amnion. I still think that the first cellule is actually formed in the end of the pollen tube - I am not sure if I understand Wagner rightly and that, or that the first cell was formed from the amnion - this seemed to be the view taken by Mirbel & Spach, after making allowance for their mistaking the embryo-sac for the embryo-itself - I again, draw the conclusion that the first vesicle is formed between the two membranes, but (pollen tube) (amnion) developed into the amnion: and I am the more strengthened in this opinion that I am extremely doubtful of cells being generated within cells as Meyen supposes. but I suspect they are mere foramen of external mucous - But who is to determine all this? our best achromatic compound mi- (costing £70 or £80) croscopes, according to the principles invented in London, two or three years ago, only are sufficient to show the generation of the vesicle - and when once an opinion is gotten to work, facts are neglected - I prefer generally to state bare facts and to tell what Physiological dreamers affly think on

not believe that one half of the structures said to have been seen actually exist, and I do not approve of one dabbling in subjects that he cannot himself vouch for, and also show to the class: - not by drawings, for these are mere auxiliaries, but by actual inspection - for the drawing may be coached up to represent any thing.

Another reason that gave me a distaste for the subject is that most must be mere deductions from supposed facts, and when not two observers agree about these facts what is the worth of deductions. Take the very subject of the porosity of the walls of cells: it is now believed that Meibel was deceived, and that none such exist - yet Hooker seems to be so satisfied of that structure, that most of his illustrations (some of which I have purchased from him) show dots or pores, and clefts on the cells. Then again, allowing that Meibel was deceived, and that he took to be pores, are we not to allow pores at all, when liquids are found to pass through the membranes, and that is more when some animal cells are seen to pass from one cell in to another in the genus Phegneum! nay, particles of starch have been made to pass in to the interior of these cells.

Vegetable anat. & Physiology is a peculiar study, and an engrossing one - but I think it ought to be left to those whose minds are not capable of applying the few broad and incontestable facts known regarding them, to Systems - The highest and perhaps only branch of pure Botany, which combines in itself a knowledge of nearly all that is worth knowing.

The only portion of Anat. & Phys. I felt interested in is the structure of the ovule & fecundation - and I agreed in Mr Jno that Corda had cleared up the subject: but alas! I am now as clearly convinced that Corda's observations were entirely fallacious: and I am more disposed to believe with Mr Meyen & Schleiden, and Griffith, that no rupture takes place in the pollen tube - Schleidens duplicature of the amniotic sac is not tenable - Griffith and Meyen nearly agree, that the

in a class that they will take a pleasure in reading at home - and to take up those unpopular or dries parts which they would be disposed to pass by - and to collect together such amusing, historical or useful notices of the plants examined in the class, by specimens or drawings, as they are not likely to find collected in any one book. I look on the class then as a mere supplement, a mode of putting the student on the right track, but of itself useless unless he studies at home not only at the time, but after ~~he leaves~~ the course is closed.

I have a horrid antipathy at making any subject of science popular: so as to lead the hearers to suppose that they now know a little of every thing for every day conversation, and therefore they lay it aside for some other novelty. I have suffered monstrously myself from the pre-tension of Botanophilists: and therefore I have no wish to extend their number unnecessary: at the same time, so long as they understand that they are merely lovers of Botany - but not Botanists, I have no objection to let them amuse themselves with stamens & pistils, and Darwin's "tetrandria monogynia strains". enough however to debauch the mind of any female.

Believe me yours very truly

[illegible]

so many different ways. that the moment one steps beyond the bare fact as exhibited by the microscope, we launch out into all manner of absurdities.

Take what I suppose is generally allowed a great Phys. fact(?), that sap ascends from the root, then is elaborated by the leaf - and finally descends: but why do Phys.ts conceal the fact, stated by ~~Dutrochet~~ that stumps of the Pine (P. picea) increased in diameter after the tree was felled!: one felled in 1821 exhibited 12, years after as many, layers of new wood in the stump around the old wood which began to be decomposed: another! which the tree was felled in 1743, continued increasing in diameter for 92 years (when observed) - How did these get on without leaves?

When I consider these facts, I often feel disposed to tell the students that the whole system, hitherto known, is unsatisfactory and a mass of foolish contradictions - suited to amuse the passing hour, but not to instruct.

But I have another dislike to lecturing

must on these subjects: this arises from the total ignorance of the subject in Medical students, of whom my class will be entirely composed. If botany is of use to a medical man at all, it is to enable him to make out (in a strange country) of the plants he finds be so and so of books, the properties of which are known — for this the Linn. system suffices — 2dly for enabling the practitioner when his chest fails in a foreign country — to select with confidence some of the natural productions although unknown to botanists: this requires a knowledge of the Nat. system. Either of these ends also to enable him to ascertain if certain drugs (e.g. Senna) be genuine or adulterated. Now a slight knowledge of Anat. & Phys. serves for this: and I think it uncalled for to waste their time in what is unprofitable: better to devote 12 months to going through dissection the whole of the medical Natural orders — and illustrate every system with specimens and draw-

-ings as far as possible. I grant you that will never make them perfect Botanists: but can any one credit that a perfect botanist can be made in one, two, or even three years, and without patient and diligent dissection at home. All that can be taught in a class is the practical portion — the mode of procuring to make out plants by the Linn. or Nat. system — this is the only part they cannot get from books: as to Anat. & Phys: they will get as much from Lindley or yours, or Lefevre's introduction, as any one can carry away in their head, and if they study any of these books at home they will get more than can be taught in a class. — And this portion that may be dispensed with in a class is the terminology: but that is dry and uninteresting, and therefore a subject the students will not read at home: they must therefore be well drilled on that, without which they cannot make out the names of plants. — In this way a complete course of Botany may be easily taught in 15 or 20 lessons — provided an abundant stock of living specimens be at hand. — My wish in this to give nothing